

MODULE ELEVEN - EARNED VALUE AND ACTIVITY BASED COSTING

LESSON ASSIGNMENT

Objectives:

- To introduce the participant to the fundamentals of Activity Based and Process Based Costing.

Desired Outcome: The student should be able to:

- Understand the fundamentals and terminology used in Activity and Process Based Costing.
- Know how to apply Activity and Process Based Costing for building cost plans.

Assignment/References

Read: Emblemvag, J. and Bras, B., *Activity Based Costing and Uncertainty in the Early Stages of Life-Cycle Design*

Chapter 11

WORKBOOK FOR MODULE ELEVEN

EARNED VALUE AND ACTIVITY BASED COSTING

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STAGE ONE (Before Video)

Activity Based Costing (ABC) is so named because the focus is on activity rather than product. The attempt to gather costs for tracking closer to the actual product cost has caused this evolution to a system of costing that considers a different method rather than allocation of unit level cost drivers or overhead pools.

Traditional cost systems allocate on a proportional basis the resources expended to create product. Typically these “overhead pools” are allocated as a ratio of direct labor. Since direct labor normally is a small fraction of the total cost of a product the allocation method gives a false indication of the costs of a product. When the product lot size diminishes the inaccuracy grows. When large lots of long production runs are treated by allocating overhead pools, they tend to average out. Smaller lot size runs of shorter production runs can cause large disparities in actual costs for a particular effort.

The two presentations that you have in this module explain Earned Value Management through Activity Based Costing and provide some examples to illustrate the method. The first part of the presentation brings “Earned Value” into the picture as a system to budget, track, and control costs, while the second part explains in more detail the ABC method. The Earned Value system is probably more familiar with in defense acquisition programs. To alleviate the common concern in defense acquisition we attempt to show that earned value systems used in programs today will not have to be discarded for some other new cost accounting system. Earned Value methods are indeed compatible with the ABC. There are, however, differences in the ABC method of cost accounting from the traditional financial reporting and accounting sense; overhead pools and allocations will have to be dealt with in a different fashion.

Before viewing the video tape review the “Activity Based Costing And Uncertainty In Designing For The Life Cycle” article in the back of this chapter. This article will highlight much of the presentation of Dr. Bras. Continue through both presentations before attempting to answer any of the questions in the workbook.

STAGE TWO (End of Video)

Q1. Define the following:
BCWS

BCWP

ACWP

EAC

Q2. What are the steps in the earned value process?

Q3. What is the baseline, what makes up the “Baseline”?

Q4. What does the term “distributed” mean in terms of Earned Value?

Q5. What is the difference between a “known unknown”, and an “Unknown Unknown” in terms of earned value systems?

Q6. What value can you take if you are using the 50-50 rule of earned value?

Q7. What is the most effective earned value technique...the most preferred?

Q8. What is “apportioned effort”

Q9. Explain the term “Earned Value”

Q10. Reference the graph at the end of this section, what is the project's status in terms of an earned value system? What does the heavy black line denote?

Start of Dr. Bras Questions:

Q11. Why is there a migration to the Activity Based Costing Method?

Q12. What is an "activity"?

Q13. What is a "cost driver"?

Q14. In the example provided by Dr. Bras, what is the difference in reported unit costs for item P-2 in both accounting systems.

Q15. Do all of the products (P-1 through-4) have the same overhead allocation in the ABC reported overhead costs?

Q16. In the example provided by Dr. Bras, how many cost drivers are identified? What are they?

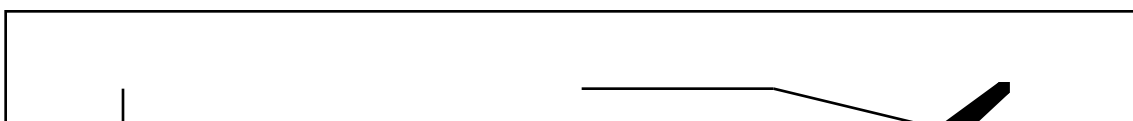
Q17. Will the unit costs change if the batch sizes are doubled?

STAGE THREE (Extending the Discussion)

Compare the activity hierarchy and network to the seven management tools you have heard and seen in a previous module.

Compare the "Define and Organize Work" step in Earned Value Systems with the requirement to "Create An Activity Hierarchy and Network" for the Activity Based Costing presentation. What are the similarities, differences?

Graph for Question Ten:



ANSWERS for Module Eleven

EARNED VALUE AND ACTIVITY BASED COSTING

Q1. Define the following:

A1.

BCWS-	Budgeted Cost of Work Scheduled
BCWP-	Budgeted Cost of Work Performed
ACWP-	Actual Cost of Work Performed
EAC-	Estimated Cost of Completion

Q2. What are the steps in the earned value process?

A2. The steps in the Earned Value Process include:

Define the Work Organize the Data
Schedule and Budget over time
Measure Performance

Q3. What is the baseline, what makes up the “Baseline”?

A3. Cumulative BCWS, control accounts, work packages

Q4. What does the term “distributed” mean in terms of Earned Value?

A4. Distribution to the cost account.

Q5. What is the difference between a “known unknown”, and an “Unknown Unknown” in terms of earned value systems?

A5. An “Unknown Unknown” can not be budgeted for, an known unknown can be planned and budgeted based on past experience or empirical data. Remember Dr. Schrage defines one as risk and the other as uncertainty.

Q6. What value can you take if you are using the 50-50 rule of earned value?

A6. Half of the value of the budgeted activity can be taken at start the other half when the activity is complete.

Q7. What is the most effective earned value technique...the most preferred?

A7. Loaded milestone or equivalent units is the preferred earned value technique.

Q8. What is "apportioned effort"

A8. Apportioned is applied to work dependent on other effort, for example quality assurance. Also referred to as factored effort.

Q9. Explain the term "Earned Value"

A9. Earned Value refers to a system of project management that allows for the planning, budgeting and control of activities related to any project. Earning Value is taking credit against budget for activities completed in a project in accordance with certain preset criteria.

Q10. Reference the following graph, what is the project's status in terms of an earned value system? What does the heavy black line denote?

A10. The project is ahead of schedule and under cost. Solid black line is the "BCWS or the baseline".

Q11. Why is there a migration to the Activity Based Costing Method?

A11. Traditional lot sizes are getting smaller, and there are smaller production runs. Traditional systems typically under-cost small volume product runs. The migration to ABC is an attempt to gather more precise costs in producing a system.

Q12. What is an "activity"?

A12. An activity is defined as "gathered process actions that have a logical connection."

Q13. What is a "cost driver"?

A13. A cost driver measures the demands placed on activities by a product.

Q14. In the example provided by Dr. Bras, what is the difference in reported unit costs for item P-2 in both accounting systems.

A14. The difference in costs reported is \$3.64.

Q15. Do all of the products (P-1 through-4) have the same overhead allocation in the ABC reported overhead costs?

A15. No, there are no “overhead” allocations in the ABC method.

Q16. In the example provided by Dr. Bras, how many cost drivers are identified? What are they?

A16. Three cost drivers are identified, direct, set-ups, part numbers.

Q17. Will the unit costs change if the batch sizes are doubled?

A17. Doubling the batch size does not require doubling of the set-ups required or the part number activity.